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ABSTRACT

Research addressing the question of what type of neighborhood environment is most supportive for older persons has identified a number of variables characterizing the physical or social context which interact with the personal characteristics of an individual to produce supportive or nonsupportive environments. Neighborhood environment was explored for a sample of 324 community-residing elderly in Portland, Oregon. Multiple regression analysis showed that neighborhood satisfaction was significantly higher for those who were satisfied with their relations with their neighbors, were not concerned about crime in the neighborhood, and lived in census tracts with a relatively low proportion of other elderly residents. Level of interactions with neighbors was found to be determined more by the personal style of the individual, as measured by activity level and level of social participation, than by the features of the physical and social environment. Convenience of location was not related to neighborhood satisfaction, but was significantly related to use of the grocery store and drugstore. Overall, perception of the environment was more important in determining neighborhood satisfaction and interaction with neighbors than objective measures of the neighborhood environment. (Author)

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PREDICTORS OF ENVIRONMENTAL WELL-BEING FOR OLDER ADULTS[1]

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What kind of neighborhood environment is most supportive for older persons? The research addressing this question has identified a number of variables characterizing the physical or social context, which interact with the personal characteristics of an individual to produce supportive or nonsupportive environments.

In the physical environment these variables include the condition and upkeep of the home and neighborhood, residence type, residential-commercial mix, and distance to facilities. The social environment refers to characteristics of the people in the neighborhood: their socioeconomic status, their age distribution, the length of time they have lived there, and the crime rate.

Both Schooler (1970) and Lawton, Brody and Turner-Massey (1978) found physical features of the environment to be good predictors of morale and well-being, but the specific physical variables differed. Carp (1975) found that the centrality of location (distance from city center) was positively related to well-being, when well-being was defined as active and autonomous use of time, space, and social network. Centrality of location is a complex measure of environment, usually associated with access to facilities, availability of public transit, high population density (including a high propor-

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tion of elderly), but also with negative factors such as high crime rates, noise, traffic, and deteriorated dwellings and neighborhoods. The contribution of each of these factors to well-being is unclear.

The research on proximity to services also establishes the importance of convenient location to various facilities in determining frequency of use of facilities and satisfaction with housing location (Newcomer, 1973; Noll, 1973; Lawton, 1977). Most of the research on proximity to services is based on responses given by apartment and public housing tenants or managers, however, rather than a mixed population.

The importance of having neighbors who are similar to the older person in age, ethnicity, and social class has been explored by a number of researchers. Rosow's (1967) classic study of the advantage of living in apartments with a high proportion of elderly tenants showed that these older people had a higher level of social interaction than those living with a more mixed age group. Rosenberg (1970) showed a similar effect of age homogeneity at the level of the city block, particularly for the poorer segment of his sample. Homogeneity of economic status was related to higher levels of social interaction for older men (Rosenberg, 1970), but not for women. Teaff, Lawton, Nahemow and Carlson (1978) found further support for the relationship between age segregation and well-being in a national sample of public housing residents. Racial homogeneity, on the other hand, does not seem to have much impact on social interaction if (a) housing is limited to the elderly and (b) one group is not an extremely small minority of residents (Nash, Lawton, and Simon, 1968).

Crime is a major concern of the elderly (Lebowitz, 1975), though perhaps out of proportion to their actual risk. It appears that older people are actually less likely to be victims than younger people (U.S. Department

of Justice, 1974; Forston and Kitchens, 1974), although their fear of crime is higher. Fear of crime and feelings of vulnerability can clearly act as constraints on the freedom of older persons to negotiate their environment.

The purpose of this study was to explore the relationship between the neighborhood as a physical and social context and well-being in a sample of relatively frail elderly persons living independently in the community, in a variety of housing types.

The environmental components that were expected to have a major effect on the well-being of the older person were divided into three major categories: the physical and social characteristics of the immediate environment (which together describe the objective environment) and the perceived environment (or subjective environment), It is assumed the physical and social characteristics of the environment affect the well-being of the respondents both directly and indirectly by affecting the way the environment is perceived. The effects of the environment on well-being are mediated by the personal characteristics of the older person which influence the individual's ability to negotiate his or her environment.

The measures of well-being fall into two categories: attitudinal and behavioral. The attitudinal measure is satisfaction with the neighborhood. The behavioral measures include the frequency with which the respondents report that they use nearby facilities and interact with neighbors.

Method

Sample. The sample included 397 elderly persons living in the Portland, Oregon metropolitan area. They were chosen to represent a high-risk older population, in that they were likely to have one or more chronic health problems and to be relatively poor. The respondents were particularly likely to be widowed, female, and live alone (over three-fourths of the sample in

each case), and the average age of the sample was 77. Five percent of the sample was confined to the home for health reasons, while 27 percent could get out of the home only with the help of others.

The largest proportion of the sample lived in single-family homes (43 percent); 14 percent lived in duplexes, fourplexes or row housing. Sixteen percent lived in larger apartment buildings with less than three floors, 16 percent in apartment buildings with four or more floors, and 4 percent in mobile homes. Most of these units are private housing with mixed age groups (68 percent); 16 percent of the sample live in public housing (largely age restricted) and 7 percent in private age-restricted housing. Almost half the sample own rather than rent their homes (45 percent). Although our sample is a relatively low income sample of the elderly in Portland, they are not concentrated in the poorest sections of town.

Procedures. The sample was interviewed three times over a two-year period, with the number of respondents decreasing to 224 on the last interview. The analyses reported here are based largely on the latter sample. The interviews averaged one and one-half hours in length, and included information about environmental, social, economic and personal aspects of the everyday life of the sample.

Measures. Measures of the physical and social environment, of the personal characteristics of the respondent, and of well-being were developed from the interviews. A number of additional data sets were also gathered, including a mapping of distances to various services, and the crime rate, demographic characteristics and zoning of each neighborhood. Table 1 lists each of the variables.

Measures of the physical environment included house type (a seven-

Table 1. Major Variables

I. Physical Environment

A. Interviewer Report

House Type: single family to high-rise apartment
Neighborhood quality: 9 dimensions including noise, commercial-residential mix, industrialization, upkeep, greenery, traffic, and vacancies

B. Objective

Convenience: measured distance to nearest supermarket, pharmacy, bank, bus line
Zoning: of own block and surrounding blocks

II. Social Environment

A. Self Report

Crime: concern about personal safety and safety of home
Satisfaction with relation with neighbors

B. Objective: all based on data aggregated by census tract

Crime rate
Social class: white-collar vs. blue-collar occupations,
Education
Stability-mobility of population
Age concentration: proportion of population aged 60 or over

III. Personal Characteristics

Age
Sex
Social class of self and spouse
Length of time in neighborhood

IV. Dependent Variables

A. Neighborhood Satisfaction: "Is this a good neighborhood for older people?" and "How satisfied are you with your neighborhood?"

B. Activity Level: frequency of going to the grocery store, supermarket, drugstore, post office, bank, restaurant

C. Neighborhood Interaction: how often talk to neighbors on the phone, speak to them in person, visit in their homes, are visited by other people, and speak to people other than friends, relatives, and neighbors

point scale ranging from single family home to high-rise apartment); a convenience index based on distance to supermarket, pharmacy, bank, and bus line; zoning of the block the respondent lives in and of the surrounding area; and a neighborhood quality index based on nine interviewer ratings (including noise and traffic levels, commercial-residential mix, industrialization, and upkeep).

The social context was represented by the following variables: self-reported concern about personal safety and safety of the home, and the burglary rate by census tract. In addition, 1970 census data provided the proportion of elderly in each census tract, and was the basis for a factor analysis that yielded measures of socio-economic status and stability-mobility for each census tract.

Personal variables considered included sex, age, and social class of the respondent.

The measures of well-being included neighborhood satisfaction, activity level, and neighborhood interaction. Neighborhood satisfaction was derived from two items: "Is this a good neighborhood for older people?" and "How satisfied are you with your neighborhood?" Activity level was measured by a six-item index based on frequency of going to the grocery store, supermarket, drugstore, post office, bank, and restaurant. Neighborhood interaction was based on a five-item index summarizing how often the respondents talk to neighbors on the phone, speak to them in person, visit in their homes, are visited by other people, and speak to people other than friends, relatives, and neighbors.

Results

Neighborhood Satisfaction. The respondents were in general relatively satisfied with their neighborhoods (54 percent "very satisfied," 29 percent "somewhat satisfied"). Eighty-three percent felt that theirs was a "good"

neighborhood for older people". The major reasons listed for their satisfaction with the neighborhood were their neighbors (16 percent), the commercial services in the area (15 percent) and the low noise level (10 percent). Those who were dissatisfied cited the crime rate (21 percent), relationships with neighbors (18 percent), and the general social characteristics of the neighborhood (11 percent). It would appear based on their responses to this open-ended question that the best predictor of overall satisfaction is the character of their relationship with neighbors.

In order to gain a more detailed view of the predictors of neighborhood satisfaction, sets of variables describing the physical and social characteristics of the neighborhood as assessed by the older person and by outside observers were identified. It was expected that satisfaction with the neighborhood evnironment would be related to the:

a) physical characteristics of the neighborhood: entirely residential vs. mixed with commercial and industrial; traffic and noise levels; upkeep of homes and yards; convenience of needed services.

b) social characteristics of the neighborhood: social status of neighbors; number of older persons in neighborhood; stability of the population; crime rate of area.

c) perceptions of the neighborhood: concern about safety; satisfaction with relations with neighbors; interaction with neighbors; neighborhood changed for the better or worse.

d) personal characteristics of the older person: age, sex, social class,

The dependent variable, neighborhood satisfaction (NSAT), was an index derived from two items: "Is this a good neighborhood for older people" and "How satisfied are you with your neighborhood?" In order to reduce the number of variables to be entered into a multiple regression analysis, variables with

very low correlations with the dependent variable (neighborhood satisfaction) were eliminated. Surprisingly, most of the physical characteristics of the neighborhood were eliminated at this stage, including the convenience and zoning of the area. In addition, a factor analysis was used to identify strongly correlated variables. In general, only one variable was chosen to represent a factor.

Based on the factor analysis, the percentage of older people in a census tract and the convenience of services loaded strongly on the first factor. Only age concentration (DENSITY) was retained as a variable. Similarly, length of time the individual had lived in the neighborhood was highly related to living in a single family home in an area zoned residential, and only the first, LHLONG, was retained.

Although measures of both subjective fear for one's safety (FEAR) and objective crime rate (CRIME) were available, they were only moderately related (r=.18), and only subjective concern about safety was related to neighborhood satisfaction. The third factor included, in addition to concern about safety, the variables "neighborhood changed for the worse" and "house in poor condition". Only concern about safety (FEAR) was retained in the regression analysis.

The final regression analysis contained as independent variables one measure of the physical environment (NEIGH, an index of observers' ratings of the neighborhood), two measures of social characteristics (FACTOR2-social status of the area; DENSITY-percent of population over 60), three measures of perceived environment (NI-neighborhood interaction; FEAR-concern about safety; SNHRSAT-satisfaction with relations with neighbors) and two measures of personal characteristics (LHLONG-length of time in neighborhood; OSES-family social class). The latter is based on the respondent's social class

or that of the spouse, whichever is higher. The variables were entered into step-wise regression with neighborhood satisfaction as the dependent variable. It was possible to account for 21 percent of the variance in neighborhood satisfaction based on the first three variables entered ($F=11.84$, $df=3/134$, $p<.001$). Specifically, neighborhood satisfaction was higher when people were satisfied with their relations with neighbors ($F=22.65$, $p<.001$), did not fear for their safety ($F=6.21$, $p<.01$), and lived in census tracts with a low proportion of older persons ($F=4.91$, $p<.05$). The remaining predictors did not significantly contribute to the prediction and were not entered into the regression. The final standard score regression equation was:

$$Z'_{NSAT} = .34Z_{SNHRSAT} - .20Z_{FEAR} - .17Z_{DENSITY}$$

While being satisfied with relations with neighbors may be somewhat inflated as a predictor because it and the dependent variable are both measures of subjective satisfaction, the finding is supported by responses to an open-ended question about neighborhood satisfaction which showed that the relationship with neighbors was the major reason given for both satisfaction and dissatisfaction with the neighborhood. Level of interaction with neighbors (NI), though, was not a strong predictor.

The significance of FEAR as a predictor again underlines the importance of the people surrounding the older person. This is even clearer if the separate items making up the fear index are examined. The item measuring "concern about the kind of people in the neighborhood" has the strongest correlation with NSAT.

One might expect, particularly based on Rosow (1967), that individuals residing in a neighborhood with a high percentage of older people would be more satisfied. In fact, the opposite is true for our sample. Since the percentage of older people in a neighborhood was highly correlated with

certain physical features of the neighborhood such as apartment-style housing and mixed residential-commercial areas, it is not clear which of these factors produced the dissatisfaction. When a multiple regression analysis of the predictors of neighborhood satisfaction was computed including only those who lived in single family homes, age concentration was no longer a significant predictor ($p \geq .22$), although the trend was in the same direction. With this sample, length of time in the neighborhood was added as a significant predictor of satisfaction.

Further support for the relationship between age concentration and satisfaction is provided by responses to the statement "it is best for people to live near people who are of the same age". Those who lived in apartments in neighborhoods with a high proportion of older residents were actually more likely to disagree with the statement that age concentration is best ($t=-1.99$, $p < .05$). There was no difference in response for residents of single family homes between those living in high and low age-concentrated neighborhoods. The meaning of "near" in this statement could be interpreted as referring to the housing unit or neighborhood, and it is not clear how the respondents interpreted it. In contrast to Rosow's study, age concentration was measured at the neighborhood level (census tract) rather than the apartment building level.

Activity Levels. One measure of the control individuals exercise over their immediate environment is their activity level. Some activities serve a daily maintenance function, some are primarily social in nature, and some are both. The focus here is on the activities which ostensibly serve a daily maintenance function but which may also have an important social component, including going to the grocery store, going to the bank, going to the pharmacy, going to the post office, and taking the bus.

The respondents were asked how often they engage in the maintenance related activities described above. Sixty-nine percent reported that they went to the grocery store in the last week; 24 percent reported going to the bank during the last week; 39 percent reported going to the pharmacy in the last week; 25 percent reported taking the bus in the last week; and 17 percent reported going to the post office during the last week.

It was hypothesized that the location of an older person's home would be important in determining their activity levels. The literature on "critical distances" has concentrated on evaluating the location of public housing projects, and has sometimes relied on the responses of housing managers rather than on the tenants themselves (Regnier, 1975; Newcomer, 1973; Noll, 1973). Our sample provided an opportunity to assess critical distances for all types of housing based on tenants responses.

Since this sample included a disproportionate number of the poor, frail elderly, 84 percent of whom did not have a car in the household, and since it seemed likely that many of them would be in locations chosen at an earlier age that were now no longer the most suitable to their needs, it was expected that they would particularly affected by the convenience of their location.

In testing this hypothesis, the relationships among the following variables were examined: the distance of the older person from a variety of facilities, both as measured from a map (actual distance) and as reported by the individual (reported distance), the perceived convenience of these locations (convenience), and how often each was visited (use). The intercorrelations of these variables are reported in Table 2; not all of the questions were asked for each of the six facilities, so blank cells are present.

Table 2 Correlations Between Distance to Facilities, Rated Convenience and Use of Facilities

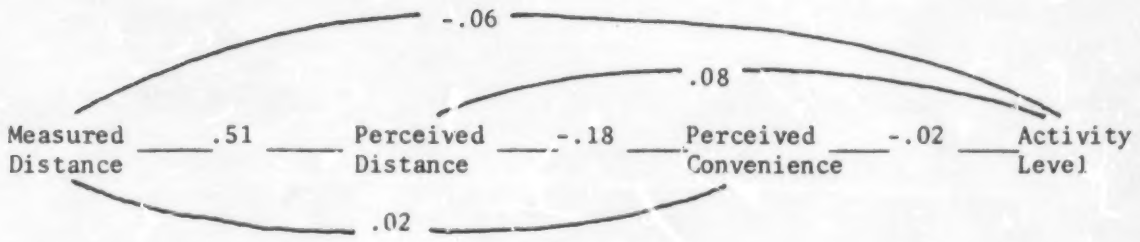
Facility	Actual Distance x Reported Distance	Reported Distance X Convenience	Actual Distance X Use	Convenience X Use
Bank	.51***	.18**	-.06	-.02
Bus	.22**	.39***		
Grocery Store	.52***		-.16**(-.27***)	
Church		.42***		
Restaurant		.37***		
Drugstore			-.20**	

[a] n=107-170
** p <.01
*** p <.001

A continuous measure of frequency of use was available for use of the grocery store in addition to the categorical measure available for use of the other facilities. The correlation of this variable with distance to the store is shown in parentheses in Table 2. It suggests that the relationship between location and use might have been stronger if a continuous measure of use ("how often do you go to...") had been employed for all variables.

Figure 1 gives an illustration, based on the use of a bank, of the complete model of the relationship between convenience and activity levels. It shows generally quite a small relationship between distance to the bank and use of the bank. Unfortunately, complete information for all the facilities was not included in the questionnaire. It would be particularly useful to have complete information about the grocery store, since it is used more frequently and is a more critical service than the bank. Based on the figures in Table 2, use of the grocery store seems to be more related to its location than is use of the bank.

Figure 1 Correlations Between Location and Use of a Bank



In order to study the importance of convenient location for those elderly who are relatively immobile, these analyses were repeated excluding from the sample those persons who had a car in the household or who were homebound due to poor health. Contrary to our hypothesis, the relationship between distance and use of facilities was not much stronger for this sector of the sample.

To make these findings more concrete, the mean number of times people living various distances from the grocery store visited it in a two week period was calculated. Those living less than three blocks away shopped 5.2 times in two weeks, those between four and six blocks shopped 3.6 times, those between seven and nine blocks shopped 2.7 times, and those who lived farther than nine blocks from the grocery store shopped an average of 2.6 times in two weeks.

Critical distances to facilities are typically presented in the form of amount of dissatisfaction with particular distances between home and the facility. In Table 3, dissatisfaction with the distance to four facilities for persons living within four distances from each facility are presented. The numbers were also calculated separately only for those in the sample who had no car and were not homebound, and these are shown in parentheses.

Table 3 Percent Dissatisfied with Distance to Facilities

Facility	Distance (Blocks) 1-3	4-6	7-9	9+
Church	5 (6)[a]	0 (0)	25 (40)	47 (56)
Bank	4.5 (5)	10 (17)	7 (8)	22 (24)
Bus	4 (4)	32 (29)	33 (33)	50 (67)
Restaurant	0 (0)	0 (0)	0 (0)	30 (35)

[a]Numbers in parentheses are percentages only for those in the sample who were not homebound, no car.

Comparing these figues to those reported by Newcomer (1973) and Neal (1973) for public housing tenants, it is clear that this sample of elderly persons is less concerned with convenience. This was true even if only those persons who had no car in the household were included in the analysis. Thus, although there was a strong relationship between the distance to facilities and the rated convenience of that location, the absolute levels of dissatisfaction at each distance were lower than expected. Although the level of dissatisfaction did not increase as quickly with distance as might be expected, the ordering of the critical distances is consistent with earlier findings. That is access to the bus was the most important consideration of those which were included since that in turn provides transportation to other more distant facilities. Next in importance came the church and bank, with the restaurant ranking least important.

How do these persons cope with the distance to facilities if they do not have a car? A comparison of distance to the grocery store with how people get there shows that those who own cars live farther from the grocery store, and that those who do not own cars generally walk if they live within six blocks of the store (70 percent). If they live farther than six blocks, they are most likely to ride with others or use taxis or buses (88 percent).

Another approach to these data is to consider the concept that it is the complex of nearby neighborhood facilities that makes a neighborhood habitable. Regnier (1975) summarizes the evidence that a "critical mass" of services should be present in any neighborhood selected for elderly housing: bus stop, grocery store, drugstore, bank, post office, church. To test this notion, a "convenience" score for each individual was constructed from the sum of the standardized distances to each of the first four services mentioned above. This overall convenience score correlated .12 with overall activity level (index of the number of times the respondents visited each facility), and .08 with neighborhood satisfaction. These relationships are not strong enough to support the notion of a critical mass of services as a central consideration in planning for an elderly sample of this kind. Indeed, the development of predictors of neighborhood satisfaction reported in the previous section showed that convenient locations were less satisfactory than inconvenient ones. This may be a function of having a sample from a variety of housing types in addition to public housing. Most of the previous research is based on public housing tenants, who may be unusual in their wish for convenient services. In fact, their move to public housing may be partly precipitated by the problems they have in negotiating their current environment. This possibility is supported for this sample by the finding that public housing residents were significantly more impaired, both at Wave I and Wave III, than residents of other housing types.

Neighborhood Interaction. Our sample of elderly persons had generally high levels of social contact, including contact with neighbors compared with a national sample (Wagner and O'Brien, in press). Fifty-six percent of them speak to neighbors daily, and only five percent speak to neighbors less frequently than once a month. Seventy-four percent report that they are "very

happy with neighborhood relations. This section will explore the relationship between house type, neighborhood environment and neighborhood interaction. The literature on the effect of house and neighborhood design on interaction patterns has been reviewed by Keller (1968).

Because there is a considerable theoretical and practical interest in the relationship between housing design and social interaction patterns, a comparison of neighborhood interaction scores (NI) for four house types was computed using one-way analysis of variance. The four house types are single family, row house, apartment, and public high rise. Although the overall F was not significant, the pairwise comparisons showed that the public housing residents had significantly more interaction with their neighbors than residents of the other house types (Table 4). Since these are high rise residents living in age-segregated housing, this conflicts with the earlier finding and supports the importance of a pool of similar people very close at hand in producing neighborly contact.

Table 4 Neighborhood Interaction

	House Type	N	Mean	Standard Deviation
(S)	Single Family	100	3.28	.73
(R)	Row Housing	35	3.33	.90
(A)	Apartment	33	3.29	.87
(P)	Public High Rise	27	3.66	.77

Overall F = 1.69 (ns)
Significant pairwise mean differences (a posteriori): P > S (t=-2.20, p <.05)
P > R (t=-1.61, p <.10)
P > A (t=-1.82, p <.10)

In an attempt to locate both the place of housing and the importance of specific aspects of the environment in the array of predictors of neighbor-

hood interaction, two regression analyses were carried out. The first analysis, based on a life space model developed as part of the larger research project (Whitelaw and Stewart, 1978) found that social contact (SOCIAL), activity levels (ADL), housing (HOUSE), and medical health status (MED) were significant predictors of neighborhood interaction. The life space model comprises nine well-being dimensions including, in addition to those mentioned above, cognitive status, lack of impairments, income, lack of immediate concern and life satisfaction. The measure of social contact includes interaction with children, relatives, and friends as well as neighbors; only one item of the eight measures neighbor interaction. Together the four significant variables explain 39 percent of the variance ($R=.63$, $F=34.78$ $p<.001$; 4/211 df), with the major portion of the variance explained by social contacts (35 percent), and an additional 1.5 percent explained with the addition of housing at step three. The standardized regression equation was:

$$Z'_{NI} = .53Z_{SOCIAL} + .18Z_{ADL} + .13Z_{HOUSE} - .12Z_{MED}$$

Thus, while housing condition had a significant relationship with neighborhood interaction, it added little to the prediction. It would appear from this analysis that neighborhood contacts are part of a life style involving social contacts with friends and relatives that are not strongly influenced by housing condition.

Finally, a regression analysis examined in depth the relationship between various aspects of the physical environment and neighborhood interaction patterns. It was predicted that interaction levels would be higher in neighborhoods that were stable, low in crime, zoned residential, in good condition, and having a high proportion of elderly in the population. Only stability of the neighborhood was found to be a significant predictor of neighborhood interaction ($F=10.84$,

$p<.01$, 1/108 df), accounting for only 10 percent of the variance. Since a number of the predictors were intercorrelated, however, it may be that neighborhoods that are stable, low in proportion of elderly, in good condition, and zoned residential are most conducive to neighborly relations. A comparison of the two regression analyses reported here showed personal factors to be clearly more important in predicting neighborhood interaction than environmental factors.

Conclusion

Based on the findings, some suggestions can be made about what makes a home and neighborhood supportive or nonsupportive for older persons. What are the cues that reveal a supportive environment?

First, the environment as perceived by the older person may be more important than the objective environment. For example, fear of crime was more important than actual crime rate and satisfaction with relations with neighbors more important than amount of interaction with neighbors. Objective indicators of the physical and social environment were less important than expected in predicting neighborhood satisfaction and neighborhood interaction levels. This is consistent with Kurt Lewin's notion that behavior is a function of the person and the environment, with the environment in question being that environment perceived by the individual rather than the 'objective' environment. Thus, it is the environment as perceived through the individual's filtering process, influenced by personality and past experience, that most influences response to the environment.

Arguing the importance of the perceived environment does not mean there are no implications for policy. For example, the media emphasis on crime and the elderly may have a strong impact on perceptions and behavior even if the individual's own neighborhood is quite safe.

Second, the importance of the relationship with neighbors appeared a

number of times. How well the older person got along with his or her neighbors, and the kind of people neighbors were perceived to be, was an important component of satisfaction with the neighborhood. In contrast to Rosow's work on the social integration of the aged, the age homogeneity of the neighborhood did not appear to have an important effect on social interaction or neighborhood satisfaction except for residents of public housing. In fact, those who lived in areas with a low proportion of older people tended to be more satisfied.

Third, while convenience of location was not as strong a predictor of use patterns and satisfaction as was expected, its effect may still be significant. For example, people living less than three blocks from a grocery store (10% of our sample) shopped almost twice as often as those living seven to nine blocks away (64% of our sample). For those people for whom going to the grocery store is an important source of both physical activity and social contact, location may indeed have a significant effect on their lives.

Finally, neighborhood interaction seems to be more determined by the personal style of the individual, such as activity levels and social participation, than by features of the physical and social environment.

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